

General Fire Behavior Forecast for the Great Basin Area

Valid For Saturday, 9/2/06 prepared 1600 hrs: 9/1/06.

Central/Southern Idaho & Bridger –Teton - Fire Weather Watch for western Idaho for high Haines for Saturday afternoon to Sunday evening. Sunny. Areas of smoke in western Idaho.

Temps 59-70 Mts. 70-87 valleys.

RH –7-28%

Wind southwest 8 mph then light.

LAL 1 Haines index 4 low – 6 high

Minimum 1-hr fuel moistures 3-5%

Northern Utah –Mostly sunny. Isolated thunderstorms after 1200 hrs.

Temps 68-79 Mts. 77-89 valleys RH – 5-25%

Wind south 10-20 mph, east 30 mph in the morning along Wasatch Mountains canyons.

LAL 1-2 Haines index 5 moderate-6 high.

Minimum 1-hr fuel moistures 3-6%

Southern Utah and Arizona Strip – Mostly sunny until 1200 hrs the partly cloudy.

Temps – 70-81 Mts. 83-93 valleys, 95-101 in lower valleys RH – 11-29%

Wind northeast 10-20 mph.

LAL 2,4 in the mountains. Haines index 4 low.

Minimum 1-hr fuel Moistures 3-6%

Overnight RH recoveries taken from RAWS for the various Eastern Great Basin dispatch centers can be seen in the table below. Where recoveries are good expect burning periods to begin later in the day.

Central Idaho	Payette	Boise	East Idaho	Sawtooth	Teton	Southern Idaho	Northern Utah	Uintah Basin	Cedar City	Richfield	Moab
40-72	28-88	28-67	23-72	24-56	48-94	18-79	16-67	19-62	24-88	24-60	28-59

Active to very active fire behavior is expected again today. With the low humidity and moderate winds, fires will remain below the extreme level. If the fires are exposed to winds of 30 mph or steep slope expect fire behavior to become more extreme. With the holiday weekend upon us expect to see more human caused fires. Northern Utah and western Idaho has a Haines of 6 predicted for today, expect an unstable atmosphere that will allow fires to grow rapidly. Western Idaho has a Fire Weather Watch posted for this evening for a high Haines, their forecasted Haines is for 6 High. Low humidity is forecasted throughout the basin, expect extremely dry fuels. Slope runs are predicted in areas without wind, Idaho and western Wyoming. Fires are rekindling with the dry fuel conditions and adverse weather. Caution should be used when establishing mop-up criteria, take into account long range spotting and a high probability of ignition. The fine dead fuels are dry and ready to burn, the lack of an ignition source has kept the initial attack to a minimum. Pay special attention to the light flashy fuels, grass, and evaluate your tactics according to the observed fire behavior. Minimum one-hour fuel

moistures will range from 3% in the valleys to 6% in the higher mountains of the Great Basin.

With the low live fuel moistures expect the low tree branches and bushes to become ladder fuels allowing fire into the canopy of trees. Thunderstorm winds or topography will provide the trigger for crown fires to develop in the timber areas.

Grasses are a problem fuel throughout the region. Don't underestimate the potential of grass fires. Expect rapid rates of spread and long flame lengths. With the probability of ignition of 88-90% spotting will be aggressive; don't get out flanked by these rapidly moving grass fires. The cheat grass has developed a mat that is more difficult to extinguish than usual. Anticipate fire to creep under wet lines and retardant lines in areas where fine fuel matting is seen.

Rates of spread and flame lengths will be in the very active range.

Expect fuel model 3 (tall grass) to produce 20 foot flame lengths at the head and a rate of spread of 3 miles/hr. under the following conditions – 3% fine fuel moisture, 6 mph midflame windspeed and 40% slope. The spotting distance on this fuel model under these conditions is up to .3 mile.

Fires burning in pinyon-juniper and sagebrush (**fuel model 6**) should produce rates of spread of up to 2 mile per hour with flame lengths up to 9 feet at the head (3% fuel moisture and 6 mph midflame windspeed, 40% slope). Spotting distances of .3 mile can be expected. **Live Fuel Moisture in Sagebrush is in the moderate to high fire behavior range and will contribute to fire intensity and spotting distance. Retardant aircraft will be necessary. Flanking attack by engines and indirect attack ahead of the fire must be used.**

Rates of spread in **fuel model 2** Timber (grass and understory) can be expected to be up to 1 mile per hour with flame lengths up to 10 feet and spotting of .3 mile at 2% fuel moisture and 6 mph midflame windspeeds.

Expect fire intensity in Idaho to be high to extreme in **fuel model 10** (dead and down fuels) due to low 100 and 1000 hour fuel moistures especially if 1-hr. fuel moistures drop below 5%. **Expect torching, spotting of .3 mile and crown runs induced by slope or winds in this fuel model. Conifer live fuel moisture levels are low enough to sustain extreme fire behavior.**

ERCs in central Idaho are at or above the 97th percentile. Historically ERCs peak in the Boise NF towards the end of August and remain over the 90th percentile until the end of September. Most of the large fires on the Boise NF occurred at higher percentile indices.

Specific Fire Behavior:

Below are tables that illustrate the possible ranges of fire behavior. Values are based on predicted weather conditions during peak burning period. Lower values are for higher 1-hour fuel moistures (range of 2-6%) and lower midflame windspeeds (range of 3-7 mph). A slope of 40% is used at maximum spread. Adjustments must be made for conditions (fuel moistures, shading, winds, aspect, slope and elevation) to determine site specific fire behavior.

Fuel Types	Flame Lengths Feet	Rate of Spread Ch/hr	Probability of Ignition	Spotting Potential In Miles
Short Grass FM 1	5-7	82-206	88-90	.2
Scattered Sage/open stands of Ponderosa FM 2	5-10	24-76	88-90	.3
Tall Grass FM 3	12-20	88-236	88-90	.3
Pinyon-Juniper FM6	6-9	26-68	88-90	.3
Ponderosa Pine-closed stands FM 9	3-5	7-19	88-90	.3
Timber with heavy surface fuels FM 10	5-7	8-15	88-90	.3

Dead Fuel Moisture	1hr 3-6% sunny 5-11% w/ cloud cover	1000hr 6-13%
Live Fuels	Live Fuel Moisture	Expected Fire Behavior
Sage	75-150	Moderate to Extreme
Juniper	80-120	High to Extreme
Conifer (Payette and Salmon -Challis) Grand Fir Subalpine Fir Douglas Fir Lodgepole Pine	131 71-97 98-103 105-108	High to Advanced – Comparing to past fire seasons the live fuel moisture readings are similar to readings taken in Aug. 2000. Fires on the Salmon- Challis NF during July and August of 2000 displayed extreme fire behavior with extensively large crown fire runs.

Common Denominators of fire behavior on tragedy fires:

- *Most incidents happen on the smaller fires or on isolated portions of larger fires.*
- *Most fires are innocent in appearance before unexpected shifts in wind direction and/or speed results in “flare-ups” or “extreme fire behavior.” In some cases, tragedies occur in the mop-up stage.*
- *Flare-ups generally occur in deceptively light fuels, such as grass and light brush.*
- *Fires run uphill surprisingly fast in chimneys, gullies, and on steep slopes.*
- *Some suppression tools, such as helicopters or airtankers, can adversely affect fire behavior. The blasts of air from low flying helicopters and airtankers have been known to cause flare-ups.*